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THE AMERICAN JOURNAL OF PHOTOGRAPHY

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MOTHER AND CHILD. By Sara W. Holm.

Frontispiece, August 1901.

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THE AMERICAN JOURNAL OF PHOTOGRAPHY

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THE WILLOWS. By JOHN W. SCHULER.

Art in Photography

W. FRED ALLEN

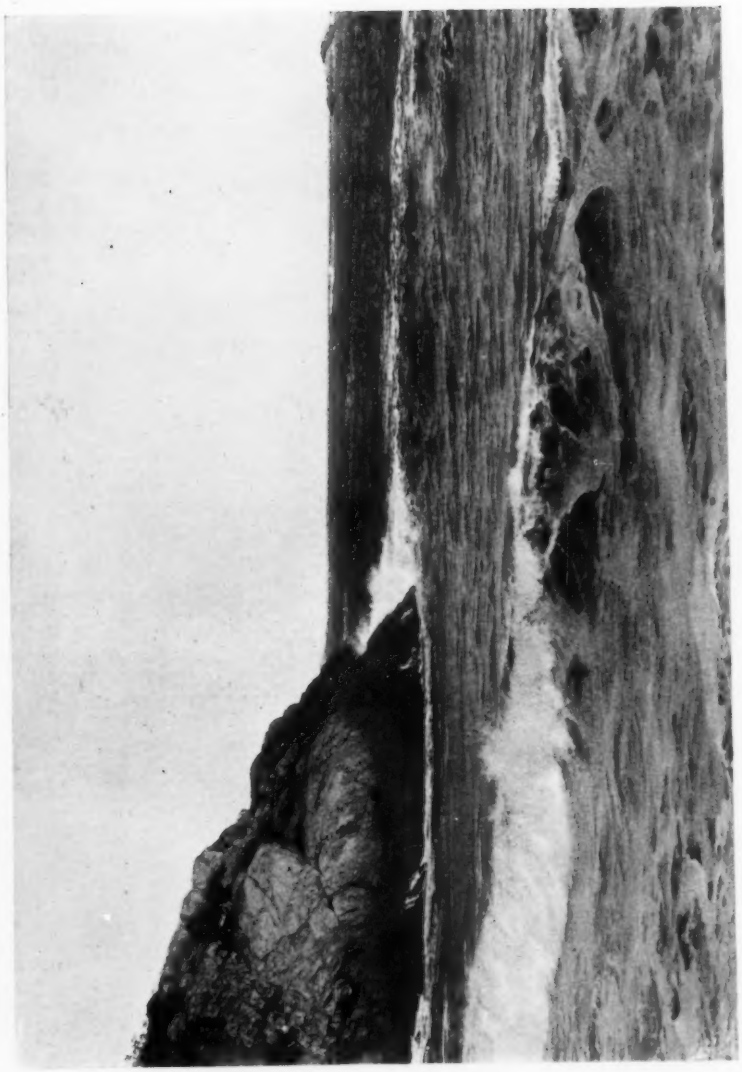
THE recent great development in the art of photography has made it one of the typical features of our time.

In the last ten years the art has undergone a complete renovation, and being transformed to fit new necessities, it has branched out into many new channels more or less directly connected with earlier processes. But the demand is that of an age hurried and utilitarian, and the supply, taking on a corresponding form, impresses the observer by its superficiality and cheapness, in place of substance and carefully wrought results involving more time and a finer quality of labor.

These pictures therefore only portray the tendencies of an age which cares less to be touched by beauty and sincerity than to be tickled by novelty, and by a sort of ready made prettiness.

Though hinted at in early days, and followed during years, photography may justly be called a modern art.

It is a province of the kingdom beautiful, which we have made ours by right of conquest; where our advance has been untrammeled by the



MARINE. By A. C. Smith.

crushing achievement of the old masters — those stumbling blocks to modern architects, sculptors and painters. — Here we have experimented in our own way, confronted by obstacles and problems new and to be solved according to our intuitions and original ideas.

Whatever result has been achieved is ours, in so far as all new forms of human progress are necessarily evolved from the previous efforts and achievements of mankind.

It is most gratifying to note that despite its rapid growth, and its adaptation to the tastes of a multitude which, while it certainly has a yearning for art, yet lacks artistic instinct, latter day photography evinces a vigorous progress. Formerly, in the average professional studio, photographs were concocted like drugs by workers who had learned the trade of making them to suit purely mercantile requirements, and such work in such hands had no pretense to art.

Considering what has since been done, it seems reasonable to suppose that even in those early days a master would have made clear the possibilities of the highest class of photography.

Of the causes that have prepared the way for the contemporary advance; three are pre-eminent.

First, the steady perfecting of mechanical appliances and the invention of more perfect methods of printing.

Second, the raising to a higher plane of the serious, thorough qualities of painting and sculpture, especially in France, which in turn compelled a higher degree of excellence in all branches of artistic photography.

The third cause is the influence of a few photographers belonging to that rare and providential class of men who, when needed suddenly blossom forth to do the work of the day.

The first two causes have aided more particularly in the line of technical advance, while the work of these few great photographers has been of such a wide range, has touched in such a vivifying manner the possibilities of the art, that it seems as if they were the prime factors in the new departure.

The public must have felt in a vague way the intense sincerity which emanates from the recent exhibitions, but one may doubt whether it has been converted to the originality of manner, to the bold effects of black and white, the study of "values," the striving for character, types which stamp every one of the Salon pictures of to-day.

Indeed, there is good reason to believe that the masses still prefer the common stuff of mechanical craftsmen, probably because having long been used to it, they understand it at a glance, and though it fails to start their thoughts into new channels, at least it neither puzzles nor irritates them.

It is a story repeated in all times how real worth, if original and for that reason running counter to the prevailing taste, is decried, and how it always ends by entering into the common inheritance.

Gustave Flaubert beautifully compares the man of genius to a powerful horse tortured by the cruel bit and spur of routine and ignorance, who nevertheless forces ahead, bearing along with him his reluctant riders—humanity. What mattered a subject to the earlier photographers? Day and night effects, gay and sad events, scenes of savage or civilized life, peasants and aristocrats, were cast by them in the same artificial, expressionless mold.

As on the walls of an Egyptian temple there defiles a monotonous procession of hieratic figures endlessly repeating one profile, gesture, costume, expression, so the old photographers, and I am sorry to say, some

of the present day workers, presented a repetition of wooden types and conventional elements arranged in the same stereotyped manner. Comparing the work of even five years ago with that of to-day, one cannot but be struck by the definiteness and suggestiveness of the present day pictures.

The best among them give not only scenes snatched from reality, living people in living attitudes, but render the very atmosphere, the ambient of reality, and with black and white go so far as to suggest color.

In the face of such progress, it is remarkable how little recognition, other than material, pictorial photography receives.

The world at large, while enjoying it, is wont to consider it a branch of utilitarian, and therefore not of pure or of high art; not reflecting apparently, that art wherever it be found, and moreover, that much of the greatest art of the world was born to serve practical ends.

Zealous critics have taken infinite pains to explain and qualify, divide and subdivide it into all sorts of degrees and classes, which, however interesting they may prove to scholars and connoisseurs, almost inevitably result in misleading the crowd — the great throng of people who, because they fear mistakes in using their own judgment, follow blindly and become rabid upholders of the letter, not the spirit, of the law. Hence the pitiful spectacle, so familiar, of the ignorant Philistine turning his back on what he terms inferior art, to worship ostentatiously before the "Masters." What he disdains, being near him, has an intelligible message for him which would naturally become the sound foundation of his personal judgment of things artistic.

In the study of art photography, broad-mindedness and sympathy with the multiple forms of expression, are absolutely requisites, as each artist has a perfect right to play his own melody, in his own way, and on the instrument best suited to him.

Criticism has too often been used as a weapon by men of one idea, who want everybody to see just as they see.

A photographer must render impressions personally received, ideas personally formed; he must extract from his consciousness an individual interpretation of the eternal subject-matter of art-nature.

Photography, in its dealing with subjects in which all take a lively interest, in the fact of its being scattered broadcast over the land, available to high and low, conveying its message to all, is essentially democratic, and consequently in absolute harmony with the tendencies of the age.

And 'tis not the less good because it descends to the masses. Art is the little flower that finds substance on which to grow in the barren desert. Scorning theories, it seizes every occasion to assert itself, and to lend its charm and dignity, its ennobling influence, to things we judge the least worthy of them.

Moreover, it is in the very nature of photography to set in evidence some of the most precious qualities a man can show. As they need of necessity to be quickly done, the original idea, if carried out in all its freshness, in telling lines, is pregnant with suggestiveness.

Because of those qualities, too often lost in their big works, we prize so highly the rough sketches of great masters, where we see the creative faculties in the white heat of the first expression; each line, seeming to tremble with the emotion they have felt.

Not one of the least important results of the entering of the new photography into the daily lives of the masses, has been to familiarize them

with the abbreviated, the spiritual writing of the artist's mind, — the few lines that give all the idea and do no more than hint at those parts of minor importance, the rosettes and buckles which have had the privilege to hold the exclusive attention of the ignorant.

The value of the preceding considerations is not lessened because of their applying only to the highest class of photography as the best work, equally rare in any art or profession, is the one basis whereon to build the possibilities of the future.

Mrs. Kasebier, Mr. Day, Mr. Stieglitz, and a few others have shown pre-eminently how modern, varied, serious and high an art photography could be made.

The work of these artists, looked at close at hand, by the masses, are a confused mass of blots and lines, but two feet away, or better still five feet, these rough elements assuming their significance, melt and harmonize in a palpitating impression of light movement and life.

Each line, however careless it may appear, is forceful and lays bare the essence of whatever it represents, in a simple manner.

In looking more attentively at their work, it seems impossible that simple black lines and masses on white paper should be made to tell so much, the strong relief of the foreground, the airy indistinctness of distance, the difference in color values, and lastly the very substance of flesh and bone — and to express it all in so subtle a way that it baffles analysis; but they do this admirably, and what they cannot say aloud they seem to suggest.

The amateur photographer's triumph over difficulties is all the greater that, in the cramped sphere of an art full of limitations, he has treated so many different subjects and has done it so well.

"The ocean old, centuries old,
Strong as youth and as uncontrolled." *Longfellow.*

By A. C. Smith.

Gum Bichromate and Ozotype Printing

ARTHUR A. GLEASON

(continued)

WHILE ozotype, unlike gum printing is of recent origin it is in reality a modification of the carbon process. In carbon printing the pigment and gelatine spread upon a strip of paper is called tissue. This tissue, after sensitizing by immersion in a solution of bichromate of potassium, is placed in contact with the negative and printed by exposure to daylight, the exposure being judged by actinometer. Then the tissue is wet and placed in contact with a sheet of paper for the final support, or if it is to be transferred the second time to avoid reversing the image, a sheet of celluloid. After drying, the two sheets of paper with the pigment between is placed in hot water and the original support is stripped off, leaving the film of gelatine and pigment to be developed by the hot water.

In this new ozotype process the final support is sensitized by spreading the sensitizing solution upon the surface of the paper; after drying thoroughly this has much the appearance of platinotype paper and prints in the same manner, giving an image very similar to that of platinum. After printing it is well washed in water and then dried; this is called the initial print. To make a finished ozotype the pigment plaster, which is similar to carbon tissue, is put upon the print and afterward the original support is pulled off and the print developed as in the carbon process. It has been found that the initial print can be used to advantage in gum printing and it is our intention in this article to explain how that may be done. The sensitizing solution which is patented and manufactured by an English firm, may be obtained from many of the larger stock houses in this country. The sensitizing of the paper must be carried on by lamp or gas light. It will be found most economical to sensitize the paper in large sheets. If you desire to size the paper mix two drams of LePages fish glue with five drams of hot water. The sizing and sensitizing may be done in one operation. Pin the sheet of paper on a board covered with a blotter, and pour the required quantity of solution into a graduate. Pour the solution onto the middle of the paper and with a three or four inch soft bristle brush rapidly spread over the surface of the paper. This will be found an easy operation and when it is finished the paper should be without streaks and evenly coated all over. About three drams of the solution will be necessary to cover a sheet twenty by twenty-six or twenty-two by twenty-eight inches. If the paper needs sizing add from ten to twenty minims of the sizing solution (glue and water) to each dram. After the paper has dried, which takes place in about half an hour, it may be cut up and if desired used right away. If it is to be kept any length of time it must be well protected from dampness. It is well to slightly warm the sheets over a fire and then pack in an old platinotype can, using the preservative and sealing the can with tape. Paper so packed will keep for three or four months.

Anyone used to printing on platinum paper will have very little trouble with the ozotype. The image formed much like that of platinum but it must be printed much deeper. After one or two trials however, it will be found very easy to judge when the printing has been carried far enough. The

AN AUTUMN LANDSCAPE. By Arthur W. Gleason.

prints must next be washed in running water for ten minutes. Longer washing tends to weaken the print. It will be noticed that the image grows decidedly weaker during the washing. The prints may be dried between blotters or by hanging to a line. You have now the initial which may be used at once or kept any length of time. The washing may be carried on by daylight provided it is not too strong. After washing, the prints are insensitive and all further operations may be carried on in full daylight. Before proceeding any farther the following stock solutions must be made up.

A.	Water	5 ozs
	Sulphate of Copper	1 oz
B.	Water	5 ozs
	Chrome alum	1-2 oz

These solutions will keep indefinately. Mix up the gum solution as explained for regular gum printing. To one ounce of the gum solution add one dram of A and from ten to fifty minims of B according to the degree of insolubility wanted. Then add the pigment as explained before. Next add fifty minims of the following solution :

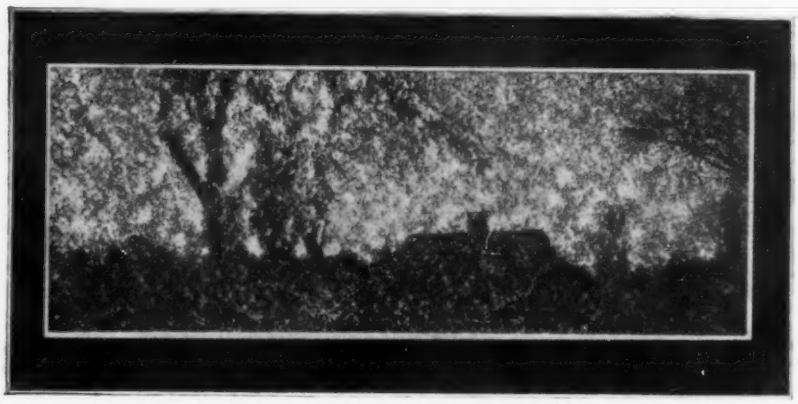
C ACETIC SOLUTION.

Water	1 oz
Glacial acetic acid	30 min
Hydroquinone	15 gr
Ferrous sulphate	5 gr

The ferrous sulphate need not be used as it is added simply to help preserve the minute details of the picture. If it is omitted use seventy-five minims of the A solution instead of one dram. This solution of gum, pigment, etc., may now be used to coat the initial prints which have been previously prepared.

The operation of coating is the same as explained before in the chapter on bichromate printing, although the coating will not need to be so thin. Hang on a line or lay face up on blotting paper until thoroughly dry. Then they may be developed in much the same manner as gum bichromate prints. They may be left face down in cold water to develop automatically or they may be helped along by rubbing with cotton or a camel hair brush.

The finishing steps are precisely as explained for the gum bichromate. Once you begin these processes you will find the work interesting, and both ready and willing mediums for the expression of the artistic in photography.



EVENING. By ARTHUR W. GLEASON.

A Simple and Inclusive Method of Testing Plates

BY CHAPMAN JONES

Synopsis of a paper read before the Royal Photographic Society.

PROBABLY every user of photographic plates has felt the need for a more direct method of testing them than the mere observation of results they give in their ordinary work.

The general methods of testing plates at present in vogue, if approximating to a useful exactness, require the use of cumbersome and costly apparatus and are tedious in their performance. If simple and rapid, they are generally uselessly uncertain and vague.

We want for testing plates a rapid and inexpensive method, and one that is easy to carry out. We want to know by a mere glance at the result of the test the general characteristics of a plate, and to be able to get by further examination usefully quantitative indications. We want one operation to give us results that will show all the properties of the plate that affect our work. Comparative sensitiveness, as a whole, comparative sensitiveness to various colors, and therefore the kind of light that will be safe to use for their development, etc., the range of gradation, the effective thickness of film, fogging tendency, and other minor matters such as the character of the deposit in different densities. And if by the use of the same apparatus it is possible to value the effect of color screens on the plates to be used, to adjust the screen to the plate where several screens are at hand, to adjust developers to get the most out of a plate as for instantaneous work, or to get great contrast and clear glass shadows as for copying black and white subjects, and in short to get all the information wanted in connection with plates and their use, if this can be done with the same apparatus, so much the better. And it is desirable that the results of the tests of the qualities of the plates shall be of a permanent character, so that new batches may be compared with last year's, or even those of many years ago. This is a matter of especial importance to any who may ever seek to reproduce conditions that gave specific results in the past.

The use of a simple graduated screen will give many of the results wanted ; but it tells us nothing about color-sensitiveness. The Abney color sensitometer is an ingeniously simple instrument for this purpose, and I therefore added to a graduated screen four colors, red, yellow, green and blue, and a strip of uncolored space, all adjusted to approximately equal luminosity. Now the combination of these two is worth a great deal more than just the two tests added together, although it requires only one exposure instead of two, because the graduated screen gives a quantitative character to the indications of the other.

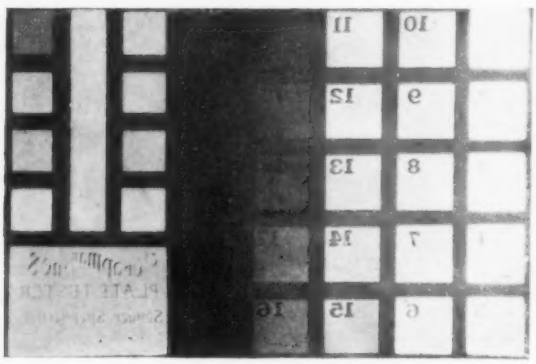
But this combination is not sufficient. It is not possible to exactly locate the want of sensitiveness, or indeed often to discover it, by the use of mixed colors. I therefore made another set of color patches dividing up the spectrum into distinct portions, and just those portions into which it is practically divided by the plates at present available. Ordinary plates are practically sensitive to the ultra-violet, violet, blue and green up to about the Fraunhofer line b or E, so the first patch is a blue that trans-

mits this light, cutting off the rest of the green, the yellow and the red. Isochromatic plates have an added range of sensitiveness extending from about E to D. The next patch is therefore a green that transmits this light. With the usual range of exposures an "ordinary" plate will show an effect under the blue patch only, while isochromatic plates show effects under both the blue and green patches. Then follows a red patch that transmits light from D upwards, which distinguishes red sensitiveness. And a further red patch distinguishes between the red from D to C, and that less refrangible than C by transmiting only the light less refrangible than C.

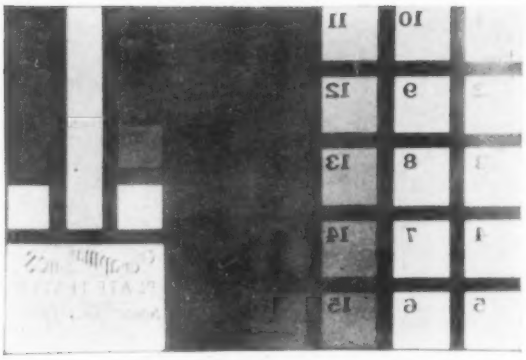
This series of definite colors, being on the same screen with the graduated tints, can also be treated quantitatively by comparing the densities given under each with the graduated tints, and there is exactly the same safeguard against over or under-exposure, as explained in connection with the Abney color sensitometer.

Such is the instrument that I first made. By its use, a single exposure and development given a plate shows literally at a glance whether the plate is an "ordinary" one, i.e., not specially sensitized, or isochromatic, i.e., sensitized to green and yellow, or of the nature of the spectrum plates, i.e., sensitive to red in addition; or also sensitive to the extreme red. The merest glance, if the exposure has been suitable, shows whether it is safe to use a yellow light for manipulating it in, or whether red is necessary, or, finally, whether only the least refrangible red is permissible. It shows at once, for example, that Cadett's spectrum plates may be manipulated in a light consisting of the least refrangible red, while Lumiete's red and yellow sensitive plates are best worked in a feeble green light. Such information is a mere matter of a momentary inspection of the plate. If the exposure should have happened not to fall within the wide range generally available, this fact is at once obvious by comparing the densities under the colored patches with the series of graduated tints, and the extent to which the exposure must be varied to secure a successful test is clearly shown.

By devoting a minute or two to the examination of two plates of different kinds, it is further possible to determine which is the more sensitive, and how much so, which has the greater proportion of sensitiveness to any particular color, such as green, yellow, or red or, taking into account the relative general sensitiveness to any such color. Of course these deter



No. 1. Normal Exposure 20 sec., 36 in. from Incandescent Lamp.



No. 2. Through red Filter, exposure 120 sec. 6 times Normal.

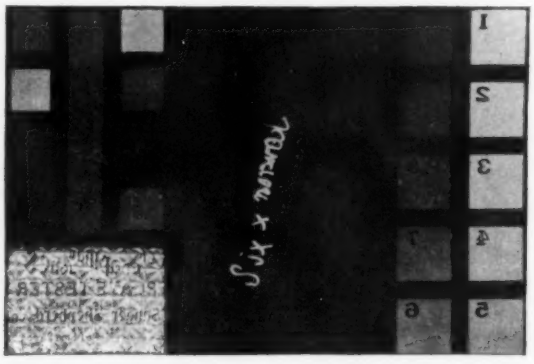
minations do not equal in accuracy the results that can be obtained by the expenditure of considerable time and the use of more elaborate experimental means, but for most purposes they are sufficient and, therefore, quite as useful. The further uses of the instrument in the adjustment of any of the conditions applicable to plates, such as developer formulae, the selection of color screens, and so on, will be referred to more in detail when discussing the methods of using the apparatus.

Ed. There has been some question and considerable variety of opinion regarding the usefulness and value of this instrument. We are pleased to give here the results of some experiments by John Carbutt, the veteran dry plate maker of Philadelphia, with the Plate Tester and his New Polychromatic Plate a new and very red sensitive plate. He writes as follows. "I find the new plate tester extremely valuable in my experiments.

Orthochromatic and especially three color printing is possible of further advancement, by the use of a new and very red sensitive plate, the Polychromatic just introduced to the public. To the three color worker who has hitherto had to employ three grades of plates to obtain his three selective color negatives, and to resensitize a rapid plate for the red screen, this new plate is very useful. With the Polychromatic plate and Polychrome selective Ray filters, but the one brand of plate is required. The half-tone prints here shown will illustrate the Polychromatic qualities of the plate, the little squares on the normal exposure showing red almost as strong as the blue. Reading from the bottom the colors are blue, green, yellow and red, to the left of the upright strip and represent for spectrum colors blue, green, red and dark red. Recently perfected Ray filters give the ratio of exposure, as 1 for blue, 3 for green and 5 for red, thus allowing a much shorter exposure for the red screen than has hitherto been possible. It has been necessary to manufacture safe light glasses to use in the lantern to see to change plates and develop by — and particularly for a safe light to manufacture the plates in."

Dark red, pink-white and white peonies, taken on Polychromatic Plate without color screen, exposure 3 min. By JOHN CARBUTT.

"Another advantage possessed by the Polychromatic plates over the ordinary orthochromatic, is photographing flowers or paintings. Rarely will a color screen be needed. Only when blue predominates, a light yellow screen would be of use in subduing the reflected actinism of the blue."



No. 3. Through Blue Filter, exposure 80 sec. 4 times Normal.

Printing the First Picture

F. R. FRAPRIE.

OF all printing papers the one most used, and the one most likely to be used by the beginner in printing, is the glossy surfaced paper composed of silver chloride in a layer of gelatine, sold in this country under the names of Solio, Albuma, etc. While the glossy surface of this paper is an offence to the eye of the artist, it is perfectly suited for rendering of details, and this is the part of photography that often appeals most strongly to the beginner. As this is the paper oftenest used by beginners, we will first consider its treatment. When ready to print, we take our negative, (and it must be perfectly dry, or it will stick to the paper, and probably be utterly ruined,) and lay it in the printing frame, with the film side up. Then, in a weak light, for the paper, though sensitive, can be handled safely to a moderate extent in the light, we open the package, take out a sheet of paper, and lay it on the negative, glossy side down. We put the back of the printing frame in place, and fasten it; then expose the frame to the full light of day. If the negative is very dense, so that little white paper can be seen through it, we can print in full sunlight; if it is rather transparent, it will be better and often necessary to print in the shade. In either case, after printing a little, we open one half of the frame away from the light, in order to examine the print. If it is not done, we print it some more; when ready for the next operation it must be printed some little darker than we desire the finished picture to be. How much, must be learned by experience, for different toning baths reduce the print to different extents. When the print is done, we take it from the frame and put it in a box or drawer, out of the light, until ready to tone. This we do not do until we have a batch of a dozen or more prints ready. We may keep prints a long time before toning; prints can be toned months and even years after printing, if carefully kept in the meantime, but for the best results, we prefer to tone within a day or two after printing, and on the same day if possible. The formula for the toning bath will be found in every package of paper, and it is best to use the manufacturer's formula. It is certainly much easier to use the single toning and fixing solution, but if you want prints which will last, don't. We have seen prints made in this way which lasted several years, but they were remarkable exceptions and most such prints begin to show deterioration after a very short exposure to light. The best plan by far is to use separate toning and fixing baths. Our method is to take fifteen grains of chloride of gold and dissolve it in a sixteen ounce bottle of water, and to have in another bottle a weak solution of the alkali, carbonate of soda or some other. When toning is to be done, enough of the gold solution is poured into a large tray to color the water light straw color; a strip of red litmus paper is put in, and very carefully, enough of the alkali is added to turn the paper just blue. Now after letting the bath stand an hour, we can tone with it. The litmus paper should remain in the bath, and if at any time it turns red again, more alkali should be added at once, as an acid bath will not tone. While the bath is standing the prints must be washed to free them from the chemicals which are put in to ensure the keeping of

the paper. For this purpose, we wash the prints in running water for thirty to fifty minutes, constantly moving them. At first, the wash water will be turned milky by the free silver nitrate combining with the soluble chlorides of the water to form white insoluble silver chloride. After a time the water will be clear, but washing should still be continued for a considerable period. When thoroughly washed, we transfer the prints, one by one, to the gold bath. In this we keep them constantly moving and the color gradually changes from a red or purple to a brown and then to a gray, weakening the print at the same time. When the print has reached the desired color, and this should be in from eight to ten minutes, transfer to clear water for a minute and then to the hypo bath. If the gold bath tones quicker than this time, add water; if slower, add gold and if needed, alkali. The hypo bath should be one ounce to sixteen of water, and a fresh lot should be used for each batch of prints. Be especially careful not to get any hypo on the prints before toning is finished, as you will have all kinds of spots and stains if you do. Leave the prints in the hypo about fifteen minutes, moving about so that all may be acted on by it. Then wash very thoroughly in running water an hour at least, or a dozen five minute soaks in clean water. Lay the prints out to dry separately, face up, on a cloth or paper. They will curl in drying, but may be straightened out under a ruler. If an exceptionally glossy surface is desired, the prints may now be squegeed on a ferrotype plate. Clean the plate very carefully with soap and water and you will probably not be troubled by the prints sticking; if you are, you will have to get a five per cent solution of paraffin in benzol from your druggist, and rub it on and off again with a clean cloth. Then wet the prints and lay them face down on the surface, taking care that they do not overlap. Lay a cloth or towel over all, and rub it down smoothly with the hands; then take the rubber roller and pass it over the whole plate firmly several times, holding the cloth so that it will not slip. As the surplus water is pressed out from under the prints, it is absorbed by the cloth. When all the water is removed and the prints lie flat, with no air-bubbles under them, put the plate in a warm place to dry. Do not attempt to remove the prints until they are thoroughly dry; then they will fall off of themselves, or spring off easily if a knife is inserted under one corner.

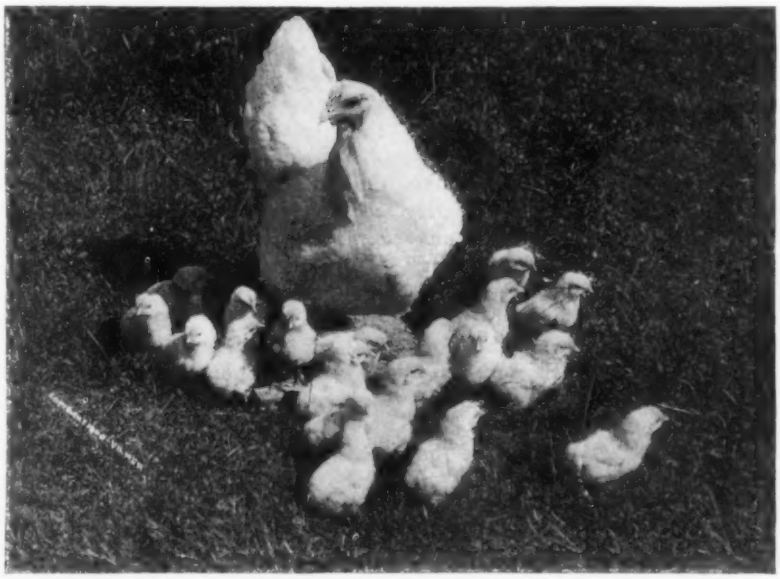
For proofs or cheap prints one often uses blue print paper. The manipulation of this is simpler than any other photographic process. It is simply necessary to print the paper until the darkest parts appear bronzed; then wash twenty minutes in water, and dry. Although this paper is the cheapest to purchase of any kind on the market, it is still cheaper to coat it at home, which may be done very easily, following the formulas to be found in any photographic reference book, and often given in these columns.

The printing and toning of silver papers with a collodion base instead of one of gelatine, such as Aristo, is not essentially different from that given above, as long as simply gold is used in toning. When, however, platinum toning is desired, an additional process is necessary. After the print has been washed and toned in the gold bath, it is put after rinsing into a bath of potassium chloroplatinite, made according to the instructions given with the paper, and toned to an olive or black color. This process requires much skill and experience in order to get the best results, and practically the same results may be obtained by the amateur by the use of developing papers with

less trouble and by more simple methods.

Thus we come naturally to the developing papers, of which the oldest and best known in this country is Velox. These papers have the especial advantage for the amateur that they can be and usually are printed by artificial light. For this any sort of light, from a kerosene lamp to an electric arc, may be used. The most important thing is to use the same light regularly, in order that the various exposures required by different negatives may be more easily estimated. It is advisable always to print at the same distance from the lamp, and from eight to twelve inches is a very good distance. The principal difficulty is in the exposure, and this must be learned by experience. An average negative eight inches from a four-foot gas burner will require about thirty seconds exposure. It is an excellent plan to write the exposure found to be correct on the negative envelope. For developer, Metol-Quinol is excellent, except for those persons to whom it is poisonous. To them, and to others who find M. Q. too expensive, we recommend Hauff's Ortol tubes. They make a most excellent developer for either plates or paper, and on the latter give most beautiful cool tones devoid of any tinge of green, without the addition of bromide. By diluting strongly, we get more brownish tones, and if greens are desired, they may be secured by the use of bromide.

In order to avoid blisters, which are caused by abrasion of the prints, and particularly by cold wash water, the gelatine must be hardened. This may be done by the use of acid hypo, at the expense, probably, of the per-



HEN AND CHICKENS. By W. E. VILMER.
A Prize Winner made on Hammer Plate.

manence of the prints. It may be done more safely by rinsing the prints, after fixing in plain 1 : 4 hypo, and then laying for two or three minutes in a two or three per cent solution of formalin. If either of these methods is used, the washing must be very prolonged, for the hardened gelatine holds chemicals with great tenacity. The prints are to be laid out to dry face up, and if two come into contact during this operation, no efforts of mortal man will separate them. They are fast for eternity.

The most expensive and most beautiful of the popular printing processes is platinum. The impression that platinum printing is extremely difficult is fortunately rapidly losing ground. It is true that the image prints out only faintly, but a very little experience suffices to render any one a fair judge of the proper exposure. As platinum paper is especially susceptible to moisture, it is sold in hermetically sealed cans, and should never be opened or printed except on a clear dry day. If the whole can is not used the first time, the tape should be fastened about the top as it was originally. After printing, which should continue until the details are faintly visible in gray on a yellow ground, the print is immersed in the developer, a saturated solution of potassium oxalate. No additions are necessary, although other ingredients are sometimes recommended. This developer should be used over and over again, simply adding new solution as the quantity grows less. Never mind the sediment ; it can do no harm. After the picture is developed, it must not be rinsed, but must be put immediately into a 1:60 solution of pure hydrochloric acid. After five minutes it is transferred to another, and at similar intervals to a third and to a fourth if needed. It must pass through acid baths until the last is perfectly clear. Then wash twenty minutes and dry.

Besides the processes mentioned, which depend on the action of light on salts of silver or iron, there is a third class of printing processes, in which the sensitive medium is a mixture of a chromate and a colloid, as gum or gelatine. This class includes carbon, gum-bichromate, ozotype and gum-ozotype. The characteristic of all these is that the color of the print is due to the pigment mixed with the colloid. Hence any desired color may be obtained. The last three processes offer great possibilities for the modification of the print during development, and are especially adapted for large negatives and broad, sketchy effects. They are too complicated and tedious for the beginner, but those desiring to attempt them will find full instructions in Mr. Gleason's excellent articles in the present and preceding issues. The carbon process is one of 'unusual difficulties, involving one or two transfers of the picture from one support to another, but it renders detail with exquisite fidelity and possesses the merit of absolute permanency.

A word as to the production of colored prints on developing papers. Any shade of yellow, orange or brown almost, and many shades of red, may be produced by excessive over-exposure, amounting sometimes to several minutes in sunlight, and development with a suitable developer. This may be hydrochinon made with ammonium carbonate and strongly restrained with ammonium bromide, or it may be ferrous citrate restrained with citric acid. A black print may be toned to red shades with salts of uranium, or with copper ferricyanide. In no case can the permanence of these shades be said to be well assured. They all change rapidly under the influence of light.

HOUSE OCCUPIED BY FRANK CUSHING, AT ZUNI.

The Pueblo of Zuni

A. C. VROMAN

FIFTH PAPER.

IF we were asked which one of the nineteen New Mexican pueblos was the most interesting, it would be difficult to say. While Acoma, (of which, more in a future paper) in location at least, has the advantage, yet the people and pueblo of Zuni have a high place in our favor, if not our preference. For in many ways, one can see and learn more of pueblo life among the Zuni than in any other of the New Mexican pueblos.

Zuni has become better known than any of the other pueblos through the work and writings of Mr. Frank Hamilton Cushing, whose death in 1900 was a great loss to all anthropological students of the country. Cushing lived at Zuni for about five years (1879 to 1885) under the direction of Major Powell of the Bureau of American Ethnology, and was adopted into one of their clans, initiated into their sacred and secret ceremonies and at last reached the highest place but one, in the councils of the Pueblo, that of chieftainship of the priesthood of the Bow, or War Chief.

His articles in the Century Magazine, and his tour through the East accompanied by a number of the principal Indians of the Pueblo some fifteen years ago, brought them so well before the public that a detailed description will be unnecessary here.

Zuni is best reached from Gallup, a station on the Santa Fe route about two hundred miles west of Albuquerque, where conveyance can be had for the forty mile drive, reaching the Pueblo the same evening over a rather uninteresting, yet not a tiresome road. Accommodations can generally be had at the trading post of Bennett Bros., who occupy the house built by Mr. Cushing while in charge of the Hemenway Southwestern Archæological Expedition during their work at Zuni; and while not all the comforts of a city hotel can be

had, the Bennett Bros. will make your stay as interesting and as comfortable as possible.

Zuni, the ancient Cibola of Coronado's time, was the Mecca of the first Spanish adventurers in search of the "Seven Cities of Cibola", of which they had heard so much and whose streets they anticipated finding literally covered with gold: (see "The Coronado Expedition", by G. P. Winship, in 14th annual report of the Bureau of American Ethnology, part I).

There is still some controversy as to the exact location of the famous "Seven Cities", but it is generally conceded that they were, at least, in the immediate vicinity of the present Zuni, and that Coronado in 1539 was the first to locate them.

As late as 1600 we know that Zuni was located on top of Ta-ai-yal-o-na, or Thunder mountain, some five miles to the east of the present pueblo, and eight hundred feet above the plain, ruins of which are still to be seen. Twice since have the natives fled to the mountain when trouble arose between them and the invaders.

The present pueblo stands on a slight rise of ground about twenty feet above the Zuni river, which, like most of the rivers of this section is apparently dry but, by digging two or three feet in the sand, water can be had. During the early morning and evening hours, however, there is quite a little flow and dozens of the women can be seen filling their ollas and watering their little garden patches within adobe walls near the west end of the Pueblo. Picturesque indeed are they in their bright colored costumes, with decorated water jars poised on their heads, as they stop to

AN INTERIOR—MACAW CLAN. By A. C. Vroman.

gossip or watch the man with the camera.

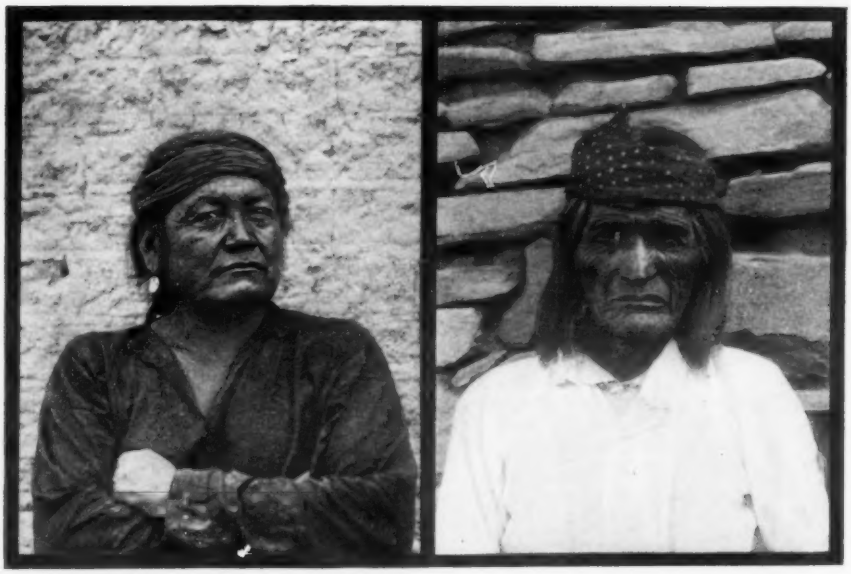
The pueblo itself is full of interesting bits for the camerist, although the natives may hide their faces or sometimes even slam the door rudely in one's face, yet, with a little patience and diplomacy, one will secure enough to make his set of photographs interesting. Don't try to hurry matters, however. Let the Indian take his own time to get ready, but when he is ready make the exposure at once, or he may change his mind.

TURQUOISE DRILLER AT ZUNI. By A. C. Vroman.

Zuni has a population of about twelve hundred, and is well built and spread over a considerable territory. The newer houses are not built above two stories in height ; but in the older portion of the pueblo, some are four and five stories high or deep. Many of the houses are quite elaborately decorated with paintings of animals or birds or other family totem. All are comfortably clean and wholesome, freshly whitewashed, and show an effort toward adornment.

It so happened that we reached the Pueblo on the evening of the return from the pilgrimage to the Sacred lake, some fifty miles south of the Pueblo, where they had gone the day previous to perform certain rites preparatory to the Rain Dance that was to take place that night and the following days. This is one of their most important ceremonies and, as there had been no rain for many weeks, it had become a serious matter with them. Hence their long pilgrimage to the Sacred lake, which we were told only takes place in exceptionaly dry seasons as a last resort, after all other petitions and prayers fail. Surely, after seeing the earnest prayerful appeal to their divinity, as shown in their faces, one could not question their sincerity, and we followed the sixty or more gorgeously costumed dancers more with a feeling of reverence than of curiosity, as they marched into the pueblo, just as the sun dropped behind the Zuni Buttes in the west.

All night we heard the stamping



CARLITO. PAHL-OWAT-TA-WA.

of their feet in that peculiar step used in nearly all Indian dances, their rattles keeping time with their song.

Our friend "Tseh-na-hy," told us that, "tomorrow he go in Kiva, no sleep for six days and six nights, all the time sing and smoke; bimby bring plenty rain; corn all dry up, no rain; nothing to eat, big dance to-night, all night, all day to-morrow, to-morrow night, then maybe rain come." We were advised that rain did come the day following our departure, so their prayers must have been answered.

The rain dance is very similar to many other of the Pueblo ceremonies, and a photograph of one might answer for several. One strange feature is the Coshira, or Mud-heads, as they are called. Ten men with canvas masks over their heads, with grotesque faces that would frighten one out of a year's growth if come upon suddenly, go through all kinds of pranks and by-play, to entertain the spectators while the dancers go into the Kivas.

Among the people you will find many strong faces, the men especially, I think, averaging stronger in character, than at any other Pueblo, and one always receives a warm welcome on a second visit to the Pueblo if he has given no cause for offense on the previous visit.

Old Pahl-o-wat-ta-wa rode thirty miles on a burro to see our Mr. Hodge when he learned he was at the Pueblo, and his pleasure was as great as any white man could possibly express on seeing his friend. Mr. Hodge had lived at Zuni some years ago with Mr. Cushing.

So far as beauty among the women is concerned, I must say the Zuni woman is lacking in it. Children and dogs, as in all pueblos, are abundant,

One should, if possible, go to the top of Ta-ai-yal-o-na mountain, which is reached by a rather difficult foot

A ZUNI PRINCIPAL. MARMON, GOV. OF ZUNI.

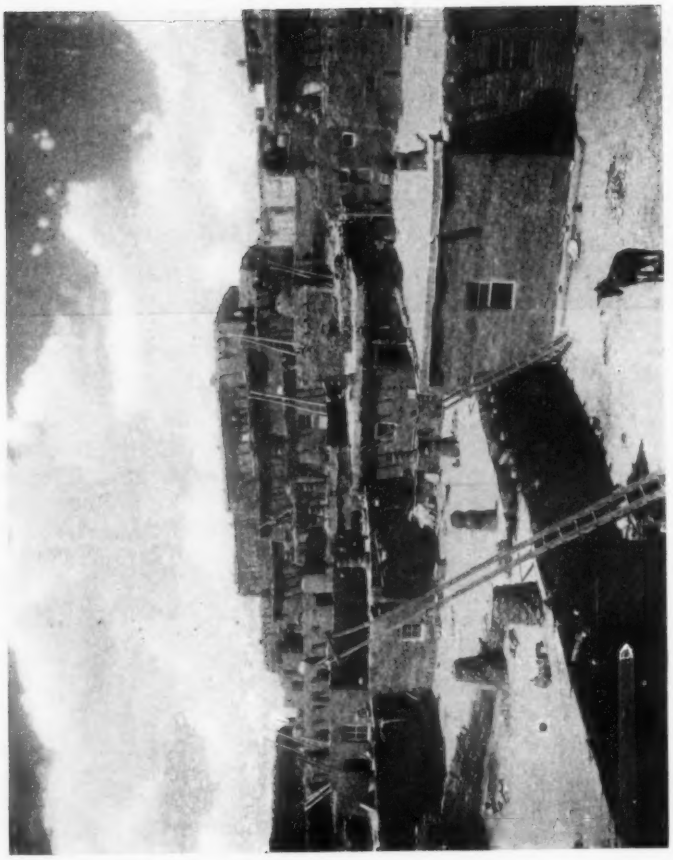
trail. From its summit a panoramic view of the entire valley may be had. The Twins, which from Zuni look like small pinnacles of rock on the side of the mesa, here seem great monoliths, standing some four or five hundred feet straight up; in Zuni folklore, these are the boy and girl thrown over the mesa, to appease the wrath of the rain-god when the waters rose to the top of Ta-ai-yal-o-na and threatened to cover it. When at last the water subsided, these massive columns of red sandstone were left standing.

After passing over a smooth bald-faced rock, into which foot holes have been cut to prevent slipping and going down several hundred feet, we came to a sheer wall thirty feet high, over which the trail leads to the summit. Near the west end of the mesa, in a cave just under the rim, is the great Sacred Shrine of the Zuni, in which are a number of wooden figures. This shrine is seldom seen by outsiders and the guides are very reluctant to show it. A little further around to the north, but on the top of the mesa, is another shrine quite as interesting. Mr. Cushing's forthcoming work on Zuni folklore will undoubtedly have much of interest on these peculiar shrines and other Zuni lore.

Pottery-making is one of the chief occupations of the women and some very nice pieces can be bought at reasonable prices. Zuni pottery is very much lighter in color than that from other pueblos and can readily be located as coming from Zuni by the manner of decoration as well as the texture.

A few blankets are made but they have not brought the art up to the perfection of the Navajo. The men make quantities of shell and turquoise beads and to bring them a quantity of shells will make them friends at once.

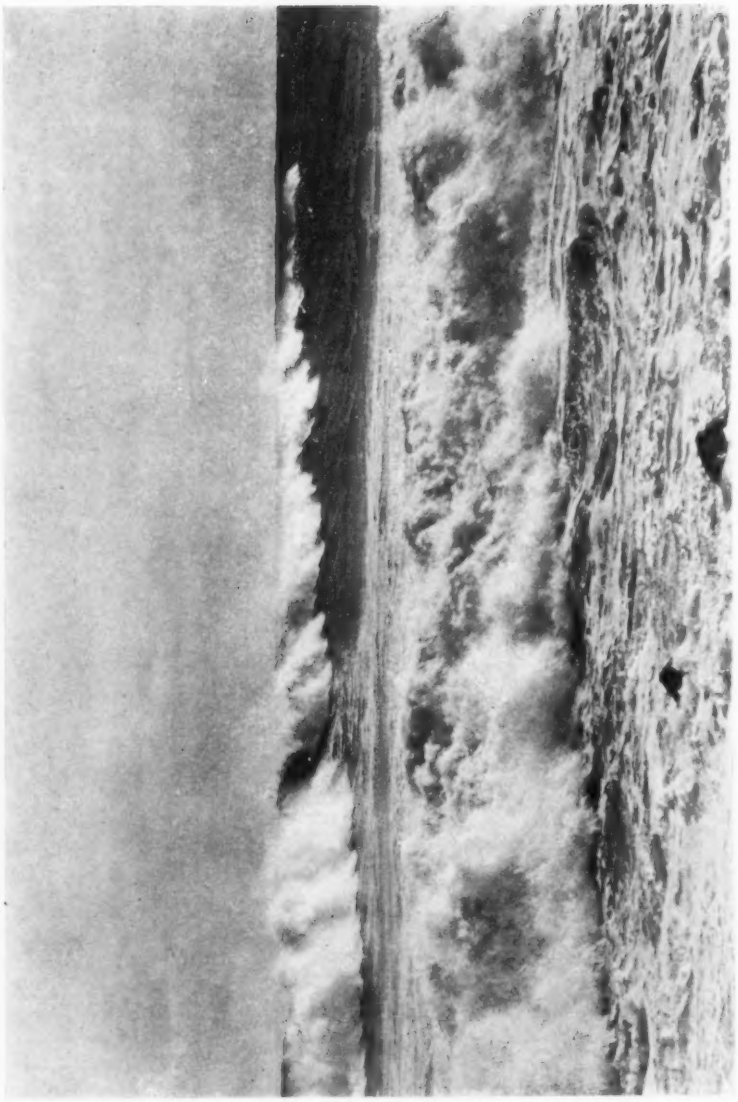
Inscription Rock, about twenty-



THE TERRACED PORTION OF ZUNI. By A. C. Vegmas.

five miles east of Zuni is well worth another day, if one has the time to spare. Inscriptions cut by the first travelers more than three hundred years ago, still remain ; except where the vandal sight-seer has defaced this monument of the past. It should be protected and put under government control before it is too late. But our time is limited and we must hasten back without even a sight of it, trusting that the modern name-scraper will not get so far from his usual haunts for another year at least.

SHRINE ON SUMMIT OF TAAIVALONA. By A. C. Vroman.



BREAKERS. By H. W. Spooner.

Summer Photography Along the Beaches

H. MCBEAN JOHNSTONE

FIRST on the list of subjects that come under the head of beach photographs, is the everlasting picture of groups of summer boarders. Now, the summer boarder is not, as a rule, a work of art — unless it be a she — but nevertheless, so associated is he with numberless good times, that any collection in which he did not take some place, would be lacking in that human interest so necessary to make the photographs worth looking at. You know it is the association that we group around the taking of a picture, that makes it valuable to us. If you do not believe this, just consider for an instant how much more interest you take in your own work than in the work of someone else and then ask yourself the reason for it. So, the summer man takes first place easily enough in this direction. Then, as a sub-division of this class of work, we have the portraying of little children, busily engaged in the building of miniature strongholds in the plastic sand and shaping out, in their own imaginations, buildings too vast for the "grown-up" mind to conceive of. And here we can get something really artistic and well worthy of a little careful study in grouping and arrangement. But it is a kind of work that one has to be thoroughly in love with to make a success, and it is also necessary to have them engrossed in their play, or the pictures will be worthless from a pictorial standpoint. Perhaps the best plan is to have someone with you to take the youngsters' minds off the instrument. It is a study in patience as well as in photography but looking at it from either point of view, it is well worthy of careful attention.

BEACH AT CASCO BAY. By NELLIE F. KENYON.

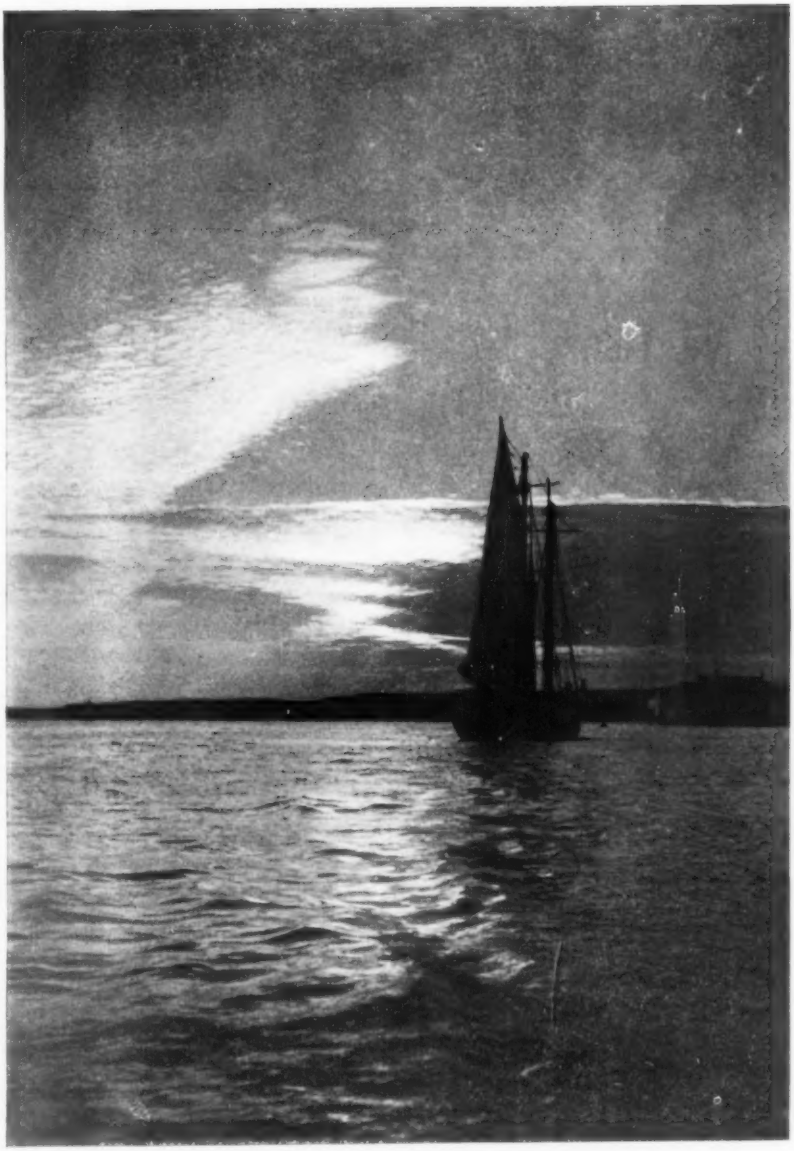
Or perhaps it will be possible to catch them romping over and around a bit of wreck which has been cast up on the shore and by the action of innumerable fierce nor'westers, has been almost buried in the ever shifting sands. Alone, it might not be a thing of beauty, but take it when a lot of merry little imps make it a scene of life and enjoyment, and at once it gives to the picture that appearance of "something doing" so to speak and takes away that look of a photograph merely made to show the print to doting parents. Or again, get them sitting with the fishermen listening to marvellous sea yarns of mermaids and devil fish and what not, while the sly old salts wink gravely at one another and lose no time in keeping at their work of mending their nets. Such photographs are worthy to be dignified by the name of studies and if the idea is properly carried out, will form a welcome addition to the stock of lantern slides that your club is getting up for next winter. At once, after the summer is over, they take on a sort of dignity that it would never be possible for Katie Jones in her bathing suit to attain.

Then too, these same fishermen with their supernaturally grave faces and shiny rubber boots are, if you catch them at work, well worth a bit of attention. Go out in their boats with them and get them at work lifting the nets, and snap pictures of the great masses of slimy, writhing fish as they quiver and glisten in the sunlight and then pour in an almost steady stream into the big flat-bottomed boat. It is great sport. The work takes place in the morning before the fog has yet risen off the surface of the water, and when the sun is just climbing up over the barely distinguishable horizon. The boat rocks on the gentle morning roll of the water as it gurgles under the bow, and were it not for the hoarse oaths of the men, it might be almost a fit time for a reverie, so peaceful is it all.

Or walk along the beach with the camera and catch the roll of the tide as it comes in, its van guard breaking on the smooth sand and other wavelets following, flowing over the top of them as though they had never existed. Here and there is perhaps a sand-piper that will give life to the scene and save it from an appearance of utter desolation. O, what a wealth of studies there are to be found along the shore, at this season, by one who is truly observant!

But to pass on, marine photography forms a most interesting branch of along shore work, during the summer months; and while it would be impossible to touch on it here, in so confined a space, and give any thing like practical instructions on it, still, it is just as well to bring it to mind. The general rules to be followed are, to remember to use a large plate, a quick lens and a sunny day when it will be possible to get some kind of gradation in your sails and prevent that flat look so common to the poorer specimens of this class. And then, speaking of flatness, it might not be amiss to just mention that if there were two or three boats included in the view instead of just one, that there is less likelihood of there being lack of perspective. In seascapes, where there are not any trees to show the effect of distance, there is great danger of the photograph not being divided into planes and failing to show distance as it should. Several boats in a view effectually prevent this fault.

In marine photography it is a lucky fellow who owns a camera where the shutter works outside the lens, for then there is less danger of moisture getting on the glass and dimming the image. On several occasions I have seen what might otherwise have been good negatives, spoiled by just this



THE ANCHORAGE. By H. W. Stooner.

ON THE BEACH. By J. H. McCorkle.

trouble Then too, it is not necessary to touch on marine views with a sunset for a background. They are common enough and certainly always beautiful. It has been said with no small degree of truth, that they owe their beauty to the fact that to bring them out as moonlights it is necessary to print until all the defects are covered over. An easy method of getting an effective picture with little trouble, somewhat of a lazy man's way. The kind of workers who go in for this sort of picture, are the ones who take them to a gallery to be developed. Nevertheless a sunset over the water is, in spite of all, a most striking affair unless overdone. Catch it some day when the long black clouds are interspersed with equally long streaks of red and yellow and then try it and see if I'm not right.

Of the many entrancing little pictures that are to be had along the shore and back over the banks, I am going to say nothing. The trees that make such grotesque pictures, the charming twisted roads overhung with cool-looking shrubs and vines, the summer campers and the picturesque old farmer with his straw hat and much bepatched breeches, will be passed over and we will go on to just a word on the manipulation of photographs of the beach type. In the first place, you never want to take a seascape without clouds. To my mind there is absolutely nothing that looks worse than a picture of water that has been left bald-headed. It seems as if something was missing. My favorite method is to use that old scheme of a 10 per cent. solution of bromide of potassium. Before applying the bromide, wash the negative in water for about fifteen seconds, and then, with a tuft of absorbent cotton, apply the solution to the sky half. It is not necessary to be very particular in doing this, for the action of the developer will prevent the formation of a definite line. After applying it, give it another rinse and then continue the developing. It is sometimes necessary to repeat this operation several times but in the print the trouble is well repaid. Sometimes, it is true, you will spoil a negative this way, but ask yourself if you think it would have been worth anything without the bromide treatment and you will often be able to willingly cast out the spoiled plate where otherwise, you might give vent to a sigh.

The light at the seaside during August is especially deceptive, being really much stronger than one would naturally suppose, and as a consequence is the cause of much over-exposure, On a clear sultry

FISHING BOATS. By N. W. Elwell.

day, the sea presents nothing but a white glare and the shore only a long stretch of uninteresting sand, and the result is almost certain to be over-timing. If on the other hand, the sky is overcast with the humid at mospheric vapor of the "dog days" the exposure of a plate will result in a uniform grey sky, lacking in interest, but the detail in the foreground and middle distance will be considerably better. It is a good plan to stop down one half and to increase the speed of the shutter during these days, though even then it is impossible to expect clear definition in the distance, because that is usually obscured by the ever present haze. Much can be done toward rectifying this however, if the developer is weakened and the process of development prolonged until all the detail has come out and can be discerned by the ruby light. It is on just such sultry days as this that sudden storms spring up and give one a chance to take advantage of these sudden workings of nature.

It is on humid grey days or even when there is a fog, that it is possible to get the best photographs of people. One can always decide if the air is clear enough by looking at the ground glass, on the finder, and if the faces can be seen distinctly, say at a distance of ten feet, then it is usually possible to bring them out as well in the negative. Such portraits require a full opening and a quick release of the shutter and the result is usually better if a prolonged development with a weakened developer be given. Perhaps nowhere, as in summer photography along the beaches, is an exposure table of so much use to the amateur, unless it be that he is an old hand at the work, and even then, he is often apt to make mistakes.

Just one word in conclusion. Remember that you are not at home in the house, and that almost every wind will load your camera up with sand, so keep a dusting brush handy.

THE INDEPENDENCE. By E. H. Washburn.

London Letter

PERCY LUND

THE strangely artificial figures that many of the earlier landscape photographers introduced into their pictures naturally led to a reaction in favor of pure landscape.

Bnt whilst absolutely wild nature is best left to herself, there is still something to be desired in village scenes, or woodland paths or cultivated farms that are largely the work of man and yet show no trace of man himself.

Undoubtedly there is a time to put in the people and a time to leave them out. Then arises the oft-discussed question of how to obtain suitable models, and whether a photographer is really justified, or can be reasonably expected to go about the country with half a dozen human beings properly dressed, at the risk of being mistaken for a pastoral playwright. To put it mildly, whether you provide your own actors for Nature's stage, or trust to those she supplies, "scratch models," as Robinson calls them, figures in landscape will give you no small amount of trouble. I have tried both ways myself, sometimes supplying my "own make," but more frequently trusting to chance and making the best of John or Sarah, Tommy or Annie, as the case may be. Tact will work wonders, and country yokels and milkmaids are not so stupid as they have been painted. Shy girls, whose shyness is largely conceit, have occasionally tried my patience, but I never ask twice whilst the sea holds other good fishes, taking my revenge in sending a good picture to the obliging Phyllis, which I know will draw tears of envy from maids who "will not when they may."

IN PORT. By HARRY WANLASS.

But this impromptu work has drawbacks now and then. Once having a bonny picture all ready focussed — of lush meadows and a distant spire, with close at hand an "old antique pump," I waited vainly for some old crone or lusty youth to come and draw water, so growing weary I knocked at the door of a neighboring cottage and preferred my request in the blandest of terms. But the woman who came out with the pail was badly, though tidily dressed and her figure was anything but appropriate to the surroundings. Her good-nature, however, commanded the best I could do, having once asked help — and I took the picture, made one print, posted it to my cottager, and broke the negative. Disappoint-

ments of this kind come but seldom. The great thing is to make the best of opportunities when they turn up.

Outside the engineer's office or architect's office one seldom sees a blue print. I speak of my own country of course, though in the States I believe blue prints are more commonly seen. This printing process, at one time pretty generally employed by amateurs, has been driven out by Velox and platinotype for quick proofing.

But the ferro-prussiate process ought still to have a place in the amateur's category, since for simple and quick printing it has no equal; no solution beyond a dish of hot water being required for development.

Certainly the blue print has failings, if judged from an artistic standpoint, but then one's proofs are not intended for exhibition. For the tourist who develops whilst away from home, or the photographer with limited laboratory accommodation, I recommend the ferro-prussiate process — not as his sole printing method, but for first impressions and scrap prints to file in that very necessary register or index which should form part of every amateur's system.

Ferro-prussiate paper cannot be obtained from all stores, though the larger photographic houses keep it. But anyone can make it — using good writing paper for the purpose, adopting a formula similar to the following. Ammonia-citrate of iron 15 parts, potassium ferricyanide 10 parts, water 100 parts. The solution should be filtered as soon as the substances have dissolved and the paper coated with it by means of a brush at once. The best plan is to coat the paper at night and it will be ready for use next morning. Keep it from the light, of course.

I saw the following paragraph respecting a new material for dishes, in a recent issue of a German photographic journal. A substance likely to supersede celluloid, which is of such an inflammable nature that it is unsafe to use it for alcohol has lately been discovered. It is known to possess good qualities, is insensitive to alcohol and perfectly fireproof. If the pulp, from which in paper factories the sheets of paper are made, be heated, a transparent substance is obtained, a celluloidal condition of the fibre, such as we see in imitation parchment. This must, however, be prepared by treating with sulphuric acid, and afterwards washing very thoroughly with water. It still appears to be a transparent substance enveloping the inner fibre, so that the half transparency is secured while the fibre is retained. By dissolving paper in an ammoniated solution of copper oxide we can get with water a similar substance. The substance obtained in this way from paper pulp is moulded into shape, and possesses the property of drying hard in a short time. From sawdust mixed with a pigment, a highly polishable material may be produced, which might be used by electricians in place of costly ebonite. The name of this non-combustible-celluloid is cellulith. Whether cellulith comes in to general use or not, I think it will be difficult for it to beat the ordinary ebonite or papier mache. For my own part I have always used papier mache for development and porcelain for toning or fixing, and I think that each for its specific purpose is excellent. The most important point in the use of dishes is to reserve each one for its own purpose, and never employ them indiscriminately.

Foreign Abstracts

Gum Ozotype. This new process has just been published by Mr. Robert Manly, brother of the inventor of the ozotype process. The sensitizing of the paper, its printing, and the elimination by washing of the free bichromate are done as in ordinary ozotype. But, in place of putting in contact, in the acetic bath, the printed paper and the prepared plaster, one coats the printed paper with a gum-pigment mixture to which are added the reducing substances. Here are the necessary formulas:

STOCK SOLUTIONS.

A.	Water	100 cc
	Sulphate of copper	20 g
B.	Water	100 cc
	Chrome alum	10 g

These solutions keep indefinitely.

C. Solution of gum arabic of 40 per cent. and pigment.

D. Take 30 cc of C and add 4 cc of A and 1-2 to 2 cc of B.

These solutions do not keep.

E.	Water	30 cc
	Glacial acetic acid	2 cc
	Hydrochinon	1 g
	Ferrous sulphate	1-2 g

Take 30 cc of D and mix with 3 cc of E, then coat the paper with this mixture as in the gum bichromate process, dry and develop in water cold, warm or hot, according to the degree of resistance of the layer.

Thus the pigmented gum contains, in this process, chrome alum which renders it much less soluble, acetic acid which acts upon the image and causes the liberation of chromic acid, and iron and copper which reduce the chromic acid to oxide of chromium, which renders the gum insoluble. (Bull. Photo-Club Paris, 1901: 157.)

Pyro-Acetone Developer. The famous pyro-acetone developer of Dr. H. W. Vogel has just been republished by his son and becomes for the first time accessible to modern photographers. We translate the recipe and the author's comments.

500 cc	distilled water
200 g	sodium sulphite crystals
10 drops	concentrated sulphuric acid
14 g	pyrogallic acid

For use take 15 cc of the pyro solution and 5 cc acetone and dilute with water to 50-120 cc. The addition of potassium bromide is not necessary with plates which work clearly. The best results are given, at least with strongly working plates, by the developer diluted to 120 cc; it develops then proportionately slowly, but gives glass-clear negatives of an extraordinarily delicate character, very similar to wet plates. The less diluted developer naturally works more quickly and powerfully.

The above is the normal manner of mixing for properly exposed plates. In case of doubtful exposures, one uses first a developer which contains only small quantities of acetone, i. e. 1 cc instead of 5 cc, and then adds acetone little by little as needed. Much acetone brings out the detail in the shadows and makes a weak negative, little acetone on the contrary gives a more powerful negative. Overexposed negatives must therefore be brought up in a developer which contains little acetone, while for underexposed plates one uses a developer containing as much acetone as possible, the solution, however, never being allowed to contain more than 10 per cent of acetone. (Phot. Correspondenz, 1901: 386.)

Reversed Negatives. Prof. R. Namias publishes the following process for obtaining simply and easily reversed negatives, which should be of interest to all carbon printers. The negative is placed in

contact with a plate which should be evenly coated, and a considerable exposure is given. The plate is now developed in a bath of glycin, which best gives the necessary image extending through the whole gelatine layer. The solution is made thus:

Sulphite of sodium, crystals	30 g
Carbonate of potassium	50 g
Glycin	10 g
Bromide of potassium	1 g
Water	1000 cc

The plate is left in this bath until the most transparent parts of the negative have developed through the plate to the back. To obtain this it is necessary to leave the plate in the solution at least half an hour; if a little fog is formed, it makes no difference. The negative is rinsed in water, and in place of fixing, it is laid in the following bath:

Permanganate of potassium	20 g
Commercial sulphuric acid	20 cc
Water	1000 cc

In this bath the silver of the positive image dissolves rapidly, and leaves a reversed negative image composed of unchanged silver bromide. The operation is carried on in the light. The plate has a marked brown coloration, due to manganese dioxide coming from the reduction of the permanganate by the gelatine, and this is now removed by bleaching with a one per cent solution of oxalic acid. Wash to remove the oxalic acid, and then develop the second time to blacken the silver bromide which forms the negative image. The proper developer for this purpose is of metol and caustic alkali, as follows:

Metol	10 g
Crystalized sodium sulphite	40 g
Caustic soda	5 g
Water	1000 cc

The stronger the light, the more rapidly does development proceed. The reversed negative is washed slightly (for it contains no hypo) and dried. If it is too intense, reduce with a dilute solution of permanganate and sulphuric acid. The success of the process depends entirely on the first development, which must be pushed straight through the film without paying attention to fog, which is removed in the reduction, and does not appear in the result. If any tendency to frill in the permanganate bath is noticed, it can be corrected by the addition of a little alum. But with good plates it will not happen. (Archives de Photographie, 1901: 112.)

Violet tones for Bromides. Prof. R. Namias gives the following process for toning bromide prints to red-violet tones.

Seignette salts	100 g
Copper sulphate	10 g
Water	1000 cc
Red prussiate of potassium	5 g

To this add by drops ammonia until the reddish precipitate of copper ferricyanide is redissolved. Immerse the prints in this until the desired tone is reached, lay for a short time in a solution of hydrochloric acid, 1:200 and wash. (Soc. Fot. Ital. XIII, 3.)

Green tones for Bromides. L. P. Clerc proposes the following process for green tones on bromide prints. Equal parts of the three following solutions are to be mixed immediately before use:

A.	Glacial acetic acid	10 cc
	Water	100 cc
	Red prussiate of potash	1 g
B.	Glacial acetic acid	10 cc
	Water	100 cc
	Uranium acetate	1 g
C.	Glacial acetic acid	10 cc
	Water	100 cc
	Citrate of iron and ammonium	1 g

(La Nature.)

The Crucible

PREVENT CURLING MOUNTS. We have received the following practical suggestion which we will give our readers the benefit of. "I have found the following remedy for mounted prints which have a tendency to curl out of shape and which has proved very satisfactory.—Place the mounted print between the folds of a newspaper having two or three thicknesses. Then place on a hot stovepipe having the back of the mount nearest the pipe and rub the hand gently over the paper which covers the face of the print. The mount will curl backward and can be made to curl the desired shape. This treatment does in no way damage the print and the mounts will retain their shape. This treatment is intended for matt surface prints or where the amateur does not have a burnisher."

PYROCATECHIN DEVELOPER. A correspondent writes for the best formula for making the Pyrocatechin Developer. It is follows:

SOLUTION A.

Cryst. sodium sulphite . .	25 grs
Pyrocatechin	5 "
Water	250 "

SOLUTION B.

Ord. cryst. phosphate soda .	47 grs
Caustic soda (purified sticks) .	5 "
Water	250 "

Use one part of solution A with one part of solution B and three parts of water. Restrain with a 10 per cent. bromide solution.

A NEW LENS. The Voigtlaender & Son Optical Co. inform us that they have, in course of preparation, several sizes of their new Apochromat Collinears f-9, a lens which will be appreciated by every process worker and in particular by those who practice three color printing. The peculiar advantage of this lens is, that it re-unites perfectly and absolutely the light waves of the three primary colors. Being corrected for these colors, it follows that the three images required in the three color process, the red, blue and yellow, will have exactly the same focal length, and will also be absolutely identical in size. This ensures a perfect registering of the three impressions on the press. The feature is an absolute necessity in first-class three color printing and the Apochromat Collinear should therefore become exceeding popular.

A NEW SHUTTER FOR HIGH-SPEED WORK. The possibilities of snap-shot photography, says the British Journal, seems to have been multiplied by a recent German invention. The "Photographisches Centralblatt" recently informed its readers that a patent had been granted for a new shutter of the focal plane type. We suppose there are few photographers who are not familiar with the principle of the focal plane shutter, in which a slit in a roller-blind passes across the plate, say in one-twenty-fifth second. If the width of the slit be one-twentieth of the length of the plate, the exposure will be one-five-hundredth second for each successive portion of the plate. In the new shutter the roller-blind is discarded in favor of two sliding panels, placed one in front of the other, running in grooves. Instead, however, of a single slit, each panel is provided with a series of slits at equal distances apart, so that the solid portions of the front panel cover the slits of the back panel when the shutter is closed. When the front panel is set in motion it exposes those portions of the plate left unprotected by the slits in the back panel, and as soon as it has moved the width of one slit, the second panel is set in motion in the same direction, and exposes the other portions of the plate through the slits in the front panel. The entire distances to be traversed by the panels need not exceed about a quarter of an inch, whatever the size of the plate. If we assume that the slit in a roller-blind shutter be of the same width as the slits in a shutter of the new pattern and the rate of motion equal in both cases, then the exposure for the entire plate will be as many times less, with the new shutter, as the quotient of the length of the plate divided by the distance traversed by the two panels. It is a recognized fact that distortion may sometimes be perceptible when a focal plane shutter is used. The new shutter localises the distortion in sections throughout the plate, and it may possibly produce some curious effects.

Notes and News

BROOKLYN, N. Y. At the annual meeting of the Brooklyn Academy of Photography, the following officers were elected: President, Sherman B. Price; vice presidents, Alexander N. Cook, Wm. Bogert Walker; recording secretary, Walter C. Daggett; corresponding secretary, Harry E. Hayes; treasurer, Alexander S. Ingram; librarian and curator, Chas. G. Balmanno; trustees, William Arnold, John M. Tallman, Samuel Baron, Edward Esmonde, Wm. T. Wintringham. The president appointed the following standing committees, chairman, print, Walter C. Daggett; lantern slides, A. A. Goubert; technical, Sherman Esselstyn; membership, A. N. Cook; rooms, Chas. G. Balmanno, historical, Wm. Arnold; photo-outings, Wm. T. Wintringham; entertainment, Sam'l. Baron; press, Wm. Bogert Walker.

The print committee, A. N. Cook, chairman, reported, — received during the year — October to April, 348 prints, of which 302 received 60 per cent. or over at the monthly contests, and thus became eligible for competition at the annual exhibition. At the annual exhibition, the gold medal for best set of prints was awarded to Edward Esmond; the silver medal for next best set to H. B. Fullerton. Blue ribbons were awarded in the following order, A. N. Cook, H. B. Fullerton, A. S. Ingram, Edward Esmonde, C. G. Balmanno, C. S. Reynolds, Ed. Esmonde, H. B. Fullerton (2), Ed. Esmonde. Red ribbons were awarded to Ed. Esmonde, Geo. D. Pratt, Wm. Arnold, A. S. Ingram, Sam'l. Baron.

From the first six blue ribbon pictures, a subsequent vote awarded the society bronze medal for the most artistic print in the exhibition to Mr. H. B. Fullerton.

The lantern slide committee, Dr. S. B. Price, chairman, reported four illustrated lectures and talks for members and their guests were given by Herbert L. Bridgman on "Peary Seeking the Pole"; Mr. Alex. T. Van Laer, the distinguished artist and art lecturer on "The School of American Artists"; Mr. Sam'l. Baron on "Paris and Its Exposition"; Dr. S. B. Price "Spinning Yarns." An illustrated talk to the members only was given by Mr. Van Laer upon "The Composition of Pictures from an Artist's Standpoint." During the year 384 slides were received, of which 172 received 60 per cent. or over at the monthly contests entitling them to place in the annual exhibition. At these monthly contests awards were made as follows: Wm. Arnold, 2 first, 1 second; Ed. Esmonde, 2 first, 2 second; H. B. Fullerton, 2 second; A. A. Goubert, 1 first; A. S. Ingram, 1 second; S. B. Price, 1 first; J. W. Turner, 1 first, 2 second. At the annual exhibition the gold medal for best set was awarded to Edward Esmonde; silver medal to second best to H. B. Fullerton. Blue ribbon to A. A. Goubert. In special class work ribbons were awarded to S. B. Price (2); A. A. Goubert; Ed. Esmonde (3); A. S. Ingram; H. B. Fullerton.

All awards in the B. A. P. are made by vote of the members. The entire exhibition this year was of an exceptionally high order, and justly merited the commendations lavishly bestowed by amateurs and professional, as well as by hosts of admiring friends.

NEW YORK. The outcome of the competitive exhibition of pictures made with Collinear lenses, the conditions of which were announced in our April number, has just come to hand, and we are able to announce as follows:

$15.00 in cash for the best print, 5 x 7 size or over, showing high speed instantaneous work, to Mr. Seaman Jones, New York City. Subject, trotting horses making 2:30 record, f-5.6, exposure 1-600 part of a second, Collinear series II.

$15.00 in cash for the best print, 5 x 7 size or over, showing time work, 1-2 second exposure or more, to Mr. George D. Morgan, Wilmington, Del. Subject, store interior, f-32, 20 minutes exposure by electric light. Collinear, Series II.

$10.00 in cash for the best print, 4 x 5 size, showing high speed instantaneous work, to Mr. George C. Embody, Hamilton, N. Y. Subject, birds at 16 to 28 inches distance, f-5.6, exposure 1-100 part of a second. Collinear, Series II.

$5.00 in cash for the best print, 4 x 5 size or under, showing time work, to Mr. Frank E. Bronson, Painted Post, N. Y. Subject, Child's portrait, f-5.6, exposure over 1-2 second. Collinear, Series II.

$5.00 in cash for the best print made with No. 2 or No. 3 Folding Pocket Kodak or No. 3 Folding Weno Hawkeye camera, to Mr. Warren E. Hill, Brooklyn, N. Y. Subject, Bridle path, Prospect park, Brooklyn, N. Y., f-6.8, exposure 1-1000 part of a second. Collinear, Series III.

Judges, Messrs. Alfred Stieglitz, Dr. Theodore G. White and W. W. Comstock. making preparations for another competitive display and offer of prizes, to take place late in the Fall.

WASHINGTON, D. C. The Wizard Camera Club of Washington, D. C., is a new organization and has some new features not usually presented in a club. It is also a school of photography, the membership being divided into classes who take up the various branches under competent instructors. At the close of each month the separate classes give an exhibition of their work in the club rooms, where they are fully criticised by the entire membership, and the following month the class passes to a new branch of the work only to return again at a later day to the class from whence they started. At the present time it only has three classes, viz: portrait, landscape and transparency; but will add a class in lantern slides in the near future. Another feature in which the amateur outside the city will be able to participate is a free dark room for visitors to the city, and they can make the club rooms their headquarters during their stay.

POLICEMAN CAMERA. The camera is successfully used in Paris for the conviction of automobilists who exceed the legal rate of speed. For this purpose a camera is used, fitted with a roller-blind shutter with two openings in the curtain. Two images are thus secured upon the plate, and the distance apart, com bined with a knowledge of the speed of the shutter, is all that is required to prove the speed of the vehicle.

COLLEGE CLUBS. The intercollegiate photographic contest was held in New York in May, Harvard and Pennsylvania each sent fifty pictures, Yale and Princeton withdrawing from the contest. The pictures were shown at Philadelphia and Cambridge afterwards. Harvard won, receiving both prizes and four honorable mentions.

DETROIT, MICH. The Photographer's Association of America will meet in national convention at Detroit, on Tuesday Aug. 6th to 9th. All pictures submitted for exhibition may be framed or unframed, but must be sent to D. D. Spellman, first vice-presidenf, P. A. of A., at the Light Guard armory, not later than Aug. 1st.

ASSOCIATION OF THE PACIFIC NORTHWEST. The officers elected for the present year are: — A. L. Jackson, Tacoma, President; H. D. Trover, Salem, 1st Vice President; Chas. Butterworth, Portland, Sec'y. and Treasurer; E. L. Curtis, Seattle, Vice President for Washington; J. C. S. Anne, Portland, Vice Pres. for Oregon; Horace C. Meyers, Boise, Vice Pres. for Idaho.

The meeting for this year will be held Oct. 3, 4, 5, at Portland, Ore., and promises to be a large and enthusiastic affair.

A "list of awards" to be given at the coming convention has been mailed every photographer in the three states — the most interesting item of which, so far as our readers are concerned, is the "Foreign Class, open to all professional photographers outside of Washington, Oregon and Idaho, one picture, any size, to be framed as desired by exhibitor, (without glass). First award; gold medal; second award, silver medal; third award, diploma.

A date for the convention which will be convenient for any one from the east desiring to attend has been chosen.

SPOKANE, WASHT. The committee on photography, in connection with the 8th Annual Spokane Inter-State Fair announces an exhibition of Photographic Art, both Professional and Amateur, to be held in Spokane, Washt., Sept. 10th to Sept. 21, 1901. The work of amateur photographers will be classed as landscape and portrait; in each division will be awarded a first prize gold medal, and a second prize silver medal, besides a grand prize gold medal for the best photograph in the exhibit. The professional portrait class will receive a diploma of honor for the best collection of portraits, and also a diploma for the best single picture exhibited. Exhibits can be sent at any time to arrive not later than Sept. 5, 1901, and should be addressed to Dr. A. H. Coe, Committee on Photography Inter-State Fair, Spokane, Washt. The awards will be in the hands of a competent jury, composed of artists and photographers of recognized ability.

LONDON. Photography for Profit — 1. Photography for the Press (Illustrated). (Dawbarn and Ward,) London).

If any of our readers have pictures which they would like to sell to British publishers, they will find this little book a very good guide. Besides giving full lists of British buyers of photograms and their requirements, it has very full chapters on the choice and treatment of subjects for periodical illustration, the making of prints in a hurry, and other needful things for the journalistic photographer. Price 50 cents, of the PHOTO ERA.

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"Now comes the fullness of the year,
The flood tide of a living joy,
When never hope admits of fear
Nor any pleasures cloy;
From birds that stir the meadow grass,
From winds that sweep the woodland ways
A thousand voices come to pass,
In chants of love and praise."

Goodale.

August. There is nothing in nature more exhilarating, for the artist photographer, than these beautiful midsummer days. The ripening summer has burned out its fierce heats, and warm days with clear, cool starlit nights are at hand. In the woods and fields, the air is filled with the music of the crickets and the shrill monotones of innumerable insects. There is a sort of brilliant beauty in the flowers, this month, which seems to foretell of their coming dissolution. Along the woodland ways and in the fields, late wild flowers bloom. Asters, chrysanthemums, hydrangeas and rhododendrons, fill the August landscape with brilliant color, mingling deliciously with the ripening apples, plums and apricots of the mellow harvest season that is now so close at hand.

The wise camerist, who is alive to his opportunities, will improve every moment, to get the pictures that are to be had for the seeking, in the great out-stretched book of nature, during this month.

Photographic Contests. At this season of the year, the number of photographic contests is as numerous as the sands upon the seashore. A magazine twice the size of the PHOTO ERA would hardly be large enough to make the announcements of the most important to our readers. A word of advice on this score, however, may not be out of place here. The successful aspirant for this kind of honors is usually the person who makes a specialty of one or two subjects, and sticks to them religiously.

Portraiture, landscapes, marine views, architectural subjects, still life, animal studies, flower and foreground studies, instantaneous work of moving objects and street life; any one of these is deep enough and broad enough for a life study. Select the class of work you like best, and thoroughly master every detail, both in regard to mechanical technicalities and to the art limitations and possibilities of the subject. The class of work chosen should not depend altogether upon one's tastes, but partly upon the surroundings in which one lives. Landscapes, flower studies and animal life are very appropriate for a person in the country, street life and architectural subjects are better adapted for the city amateur, while the person who lives near the sea will find marine views very fascinating. Those who achieve the greatest success portray with the greatest realism the scenes with which they are familiar or the types of life with which they come in contact. In a word, the successful workers are those who specialize and stick.

Pan American Exposition. Three months of the six allotted for the Pan American already have passed away and the Exposition is now in the full tide of its success. From an æsthetic standpoint, we believe, the country has never seen its like before. Architecturally it is superb, the color scheme magnificent, and the crowning glory, the nightly illumination of the buildings and grounds, is so grandly beautiful that it seems like a glimpse of another world. To witness such a spectacle is the opportunity of a lifetime. And we urge upon all readers, who can, to visit Buffalo some time during the next three months. The standard of exhibits is as high, if not higher than any similar enterprise has ever shown. The exhibits themselves are grouped together in exquisite taste and excite the admiration of all who behold them. In the Liberal Arts building are found the photographic exhibits, and among them the Eastman Kodak Co. and the General Aristo is "facile princeps." Then comes the Columbian Photo Paper Co. with a handsome exhibit of prints and paper, the Lovell Dry Plate Co. and the PHOTO ERA. All these exhibits are intensely interesting. The beautiful picture exhibit, on the walls of the PHOTO ERA Booth is constantly changing and is a center of much interest to the crowds who gather there each day. The half tone reproductions in portfolios are examined by hundreds. Altogether, it is evident, that the effort to develop photography along educational and artistic lines is bearing abundant fruit at the Pan American.

Second Chicago Salon. We are pleased to call the attention of our readers to the fact, that the Chicago Society of Amateur Photographers has decided to hold its second salon in the galleries of the Art Institute of that city, from October 1st to October 22, 1901. The purpose of this Salon as stated, in their circular announcement, "is to bring together the best examples of the photographic work of the year, rigidly to be selected by a competent jury of photographers and artists." Particulars may be had by addressing the Executive Committee, Chicago Photographic Salon, the Art Institute, Chicago, Illinois. The names of Dr. F. Detlefsen, F. Dundas Todd, W. B. Dyer, Louis A. Lamb, members of their committee on publicity and promotion are a sure guarantee of breadth of treatment and artistic selection in the Chicago Salon of 1901.

Fourth Philadelphia Photographic Salon. The Pennsylvania Academy of Fine Arts announces that, under joint management with the Photographic Society of Philadelphia, the Philadelphia Photographic Salon for 1901 will be held in the galleries of the Academy of Fine Arts in that city, from November 18 to December 14, 1901.

The purpose of the Salon is to exhibit that class of work only, in which there is distinct evidence of individ-artistic feeling and execution, the pictures to be rigidly selected by a competent jury."

Pictures which have already been shown in Philadelphia at any exhibition open to the general public will be liable to exclusion.

No awards are offered, and no charge will be made to exhibitors. All communications and all pictures submitted for exhibition must be addressed to the Pennsylvania Academy of the Fine Arts, Broad Street, Phila. Each exhibitor will be furnished with a catalogue, which will be the official notification of acceptance.

No exhibitor must submit more than ten pictures, each of which must be framed separately.

The title of each picture and the exhibitor's name and address must be clearly written on the labels provided, which must be attached by the exhibitor to the back of each picture. Nothing may appear on front of picture except the title and exhibitor's name. No accepted pictures may be removed before the close of the exhibition. Arrangements will be made for the sale of pictures if desired, subject to a commission of fifteen per cent.

The jury of selection consists of Charles I Berg, New York; Miss Frances B. Johnston, Washington; Allen Drew Cook, George W. Hewitt and Dr. Herbert M. Howe, all of Philadelphia.

National Convention. As we go to press, the first echoes reach us of the National Convention of the Photographer's Association of America to be held at Detroit, Mich., Aug. 6-9. Unless all signs fail it promises to be one of the most successful conventions on record. The absence of prizes will lend a new feature of interest to the gathering. The Lens and Brush Club of Boston under the guidance of their genial president Mr. Armstrong will leave Boston at 1 P. M. on Aug. 4th in special Pullman coaches over the Fitchburg, West Shore & Wabash R. R., reaching Detroit, Monday 7.30 A. M. This will afford ample time to rest, look the city over and get ready for the reception at the Russell House on Monday evening which inaugurates the proceedings. The rest of the week will be filled to repletion with learned discussions and opportunities for social intercourse that will well repay those who are fortunate enough to be able to attend.

Photographs through Brick Walls. It is announced that you can now, not only "have your picture taken by wireless telegraphy, but you can have it wafted through space on the crest of an electrical wave, without the intervention of even a wire as a medium, and faithfully reproduced in a few moments for publication in your favorite newspaper. You may even have your physiognomy hurled through an eight inch brick wall with the speed of a series of lightning flashes and be received in good condition for recognition on the far side of the wall, without serious detriment to your cherished lineaments." These are the marvels which the New York Herald, in the above words, declares have been accomplished, and proves by the reproduction in its columns of several photographs taken in that way.

Twentieth Century Convention. The Annual Convention of the photographers of New England will be held, this year, Aug. 27-30 in Copley Hall, Boston, and will be known as the Twentieth Century Convention. Under the able guidance of president Van Norman of Springfield, Mass., this organization has made rapid strides. More than fifty new names have been added to the roll of membership, during the past year, and following so close upon the National Convention, it is confidently believed that it will be a record breaking affair. Prof. Griffiths of Detroit with a host of other celebrities in the photographic world will be present. Secretary Collings of Holyoke, who has labored long and arduously to make it a success, declares that it is sure to be the largest, the most brilliant and most satisfactory thus far held. A cordial invitation is extended to all craftsmen, professional and amateur alike, without distinction, to be present and participate.